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10/530,407	10/02/2006	**Renato Conta**	000280.00052	5315

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EXAMINER	
AL HASHIMI, SARAH	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,407	CONTA ET AL.	
	Examiner	Art Unit	
	Sarah Al-Hashimi	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *14,15 and 17-19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13, 16, 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 recites the limitation "said support plate" in line 14. There is insufficient antecedent basis for this limitation in the claim.

3. Claim 4 recites the limitation "said plate" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is believed that applicant means the base plate and should amend the claim to recite this.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 6-11, 13, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Silverbrook (US 6,439,908).

Silverbrook teaches:

Claim 1: An ink jet printing device with a head or with heads of parallel or serial-parallel type, comprising:

a plurality of ejection modules each having chambers adapted for containing ink and heating elements adapted for commanding ejection of the ink, the chambers spaced apart from one another along a direction of printing at a constant pitch (fig 2 #12),

ejection nozzles aligned along the direction of printing (fig 3 #42), a support common to the modules (fig 3 #32), the support comprising a base plate of rigid material that defines through its thickness an elongated feeding duct for the ink (fig 12 #80), wherein the feeding duct extends substantially parallel to the direction of printing, and

a hydraulic seal forming a hydraulic tight connection between the ejection modules and the feeding duct (fig 12 #28),wherein the ejection modules are mounted side by side on said support plate and with the chambers arranged in a line along the direction of printing and in hydraulic connection with the feeding duct (fig 2 shows #12 side by side).

Claim 2: said hydraulic seal comprises a lamina mounted between the modules and, through a frame, the support (fig 12 #28).

Claim 3: a nozzle plate forming a hydraulically tight, upper closing surface for said chambers, wherein the ejection nozzles are formed in the nozzle plate and are in hydraulic connection with corresponding chambers of the ejection modules (col 3 lines 11-18 disclose a nozzle layer constituting a nozzle plate that is “positioned over an ink supply channel that extends through the silicon substrate").

Claim 4: a secondary tank in hydraulic connection with the feeding duct and integral with said plate, capable of receiving a fill of ink (fig 5 #76 is integral with #32 and fig 12 shows #78 integral to #76 wherein #78 represents a secondary tank).

Claim 6: said feeding duct is a slot-shaped aperture extending in the direction of printing along which the modules are disposed (fig 12 #80).

Claim 7: said chambers are in hydraulic connection with a front of the module and in which a counterpart is provided of the same thickness as the modules, mounted on the

base plate parallel to the front of the modules, delimited by the lamina or the nozzle plate and connected to the duct, defining a passage for the ink for said chambers (fig 8 #30).

Claim 8: said chambers are defined as notches in a polymerizable film deposited on a die of the module (fig 8 #30) and in which the nozzle plate is attached by polymerization (col 3 lines 11-18), with said film on the modules and with an adhesive on said counterpart (fig 8 #20).

Claim 9: the base plate supports electric interfacing circuits for said modules (fig 8 #18).

Claim 10: said nozzle plate supports electric interfacing circuits for said modules (fig 8 #18-nozzle layers attached to memjet chip).

Claim 11: the plurality of modules are arranged in multiple rows for a plurality of inks, wherein said rows of modules are arranged in an array on a support plate which defines feeding ducts for the chambers of the modules arranged in the multiple rows (fig 1 #12).

Claim 13: A manufacturing process for producing an ink jet printing device with heads of parallel or serial parallel type, comprising a plurality of ejection modules each having chambers adapted for containing ink and heating elements adapted for commanding ejection of the ink, the chambers spaced apart from one another along a direction of printing at a constant pitch, said process comprising:

a - providing a support common to the modules and which defines an elongated shot-shaped feeding duct for the ink that extends substantially along the direction of printing (fig 12 #32, 80);

b - providing a nozzle plate in which ejection nozzles are arranged substantially along the direction of printing (col 3 lines 11-18);

c - fixing the ejection modules on said support in hydraulically tight connection with the feeding duct and with the respective edges of the modules aligned (figs 2&3 show how modules are fixed to support facing slot-shaped apertures); and

d - hydraulically sealing the nozzle plate on the modules and the support with the nozzle plate forming an upper closing surface of the ejection chambers and of the feeding duct for the ink (col 3 lines 11-18).

Claim 20: said chambers are defined by notches in a polymerizable film deposited on a die of the module (fig 8 #30) and in which the nozzle plate is attached by polymerization (col 3 lines 11-18), with said film on the modules and with an adhesive on said counterpart (fig 8 #20).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook US 6,439,908 in view of Tomikawa US 6,039,441.

Silverbrook doesn't teach but Tomikawa teaches:

Claim 5: an elastic joint filter for a removable cartridge and in which said joint allows freedom of movement between said plate and said cartridge and has a filter function for the ink of the cartridge (col 9 lines 7-8).

Therefore it would have been obvious to modify Silverbrook to incorporate an elastic joint filter for a removable cartridge and in which said joint allows freedom of movement between said plate and said cartridge and has a filter function for the ink of the cartridge as taught by Tomikawa in order to prevent leakage of ink.

8. Claims 12, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook US 6,439,908 in view of Kanda US 6,142,604.

Silverbrook teaches:

Claim 12: said support plate and said modules define the head or the heads of the printing device (fig 3 #32, 12)

Claim 16: A printer comprising an ink jet device with a head or with heads of serial-parallel type, comprising:

a plurality of ejectors each having chambers adapted for containing ink and heating elements adapted for commanding ejection of the ink on a print medium, the chambers spaced apart from one another along a direction of printing at a constant pitch (fig 2 #12);

each head comprising a plate which defines an elongated feeding duct for the ink, the feeding duct extending along the direction of printing (fig 3 #32); and

said ejectors arranged on said plate and with the chambers arranged in a line along the same direction of printing, in hydraulic, tight connection with the feeding duct (fig 12 #80);

Silverbrook does not teach but Kanda teaches:

Claim 12: the printing device is adapted to move the head or the heads back-and-forth along the direction of printing with respect to the print medium at a printing resolution greater than the physical resolution of the pitch between the nozzles (col 18 lines 7-8).

Claim 16: wherein the printer is adapted to move said plate back-and-forth along the direction of printing with respect to said print medium synchronous with a continuous feeding motion of said print medium to provide a printing resolution greater than the physical resolution of the pitch between the nozzles (col 18 lines 7-8).

Therefore it would have been obvious to modify Silverbrook to incorporate the printer is adapted to move said plate back-and-forth along the direction of printing with respect to said print medium synchronous with a continuous feeding motion of said print medium to provide a printing resolution greater than the physical resolution of the pitch between the nozzles as taught by Kanda to improve image quality.

Response to Arguments

9. Applicant's arguments filed 07/06/2010 have been fully considered but they are not persuasive.

Applicant argues that "the ink chambers 30 are staggered. Accordingly, Silverbrook does not disclose 'a plurality of ejection modules each having chambers.., spaced apart from one another along a direction of printing at a constant pitch,'", however it is clear

from the drawings that the modules are staggered at a *constant pitch* rendering applicant's arguments moot. The distance between each of the modules is the same given that they are side by side and are the same size.

Applicant further argues that "Silverbrook does not disclose 'an elongated feeding duct for the ink that extends substantially parallel to the direction of printing'".

The amendment has been taken into consideration, and the prior art still discloses the amended subject matter. The ink channels of fig 12 #80 are elongated ducts parallel to a printing direction.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Al-Hashimi whose telephone number is 571 272 7159. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571 272 2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either PAIR or Public PAIR. Status information for unpublished applications is available through PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SA/

/Stephen D Meier/
Supervisory Patent Examiner, Art Unit 2853